

Unit – I

Chapter 1 : Magnetic Circuits 1-1 to 1-28

Syllabus : Magnetic flux, Flux density, Magneto motive force, Magnetic field strength, Permeability, Reluctance, Electric and magnetic circuits, Series and parallel magnetic circuits, Faraday’s laws of electromagnetic induction, Fleming’s right hand rule, Lenz’s law, Dynamically and statically induced emf, Self and mutual inductance, B-H curve and hysteresis, Hysteresis loop and hysteresis loss.

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Unit – II

Chapter 2 : AC Fundamentals 2-1 to 2-54

Syllabus : AC and DC quantity, Advantages of AC over DC, Single phase AC, Sinusoidal AC wave : Instantaneous value, Cycle, Amplitude, Time period, Frequency, Angular frequency, RMS value, Average value for sinusoidal waveform, Form factor, Peak factor, Vector representation of sinusoidal AC quantity, Phase angle, Phase difference, Concept of lagging and leading by waveforms. Mathematical equations and phasors, Pure resistance, Inductance and capacitance in AC circuit. R-L and R-C series circuits, Impedance and impedance triangle, Power factor and its significance, Power-active, Reactive and apparent, Power triangle.

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Unit – IV

Chapter 5 : DC Motors 5-1 to 5-10

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Unit – V

Chapter 6 : Fractional Horse Power (FHP) Motors 6-1 to 6-18

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Unit – VI

Chapter 7 : Protective Devices and Switchgear
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